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PCT/KR2003/002523

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

REC'D 29 MAR 2005

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Applicant's or agent's file reference FULL-DULL	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/KR2003/002523	International filing date (day/month/year) 21 NOVEMBER 2003 (21.11.2003)	Priority date (day/month/year) 22 NOVEMBER 2002 (22.11.2002)
International Patent Classification (IPC) or national classification and IPC IPC7 D01F 6/60		
Applicant KOLON INDUSTRIES, INC et al		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.



2. This REPORT consists of a total of 3 sheets, including this cover sheet.

☐ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of _____ sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demand 17 MAY 2004 (17.05.2004)	Date of completion of this report 07 MARCH 2005 (07.03.2005)
Name and mailing address of the IPEA/KR  Korean Intellectual Property Office 920 Dunsan-dong, Seo-gu, Daejeon 302-701, Republic of Korea Facsimile No. 82-42-472-7140	Authorized officer OH, SANG KYUN  Telephone No. 82-42-481-8165

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/KR2003/002523

I. Basis of the report

1. With regard to the elements of the international application:*

- ☒ the international application as originally filed
- ☐ the description:
pages _____, as originally filed
pages _____, filed with the demand
pages _____, filed with the letter of _____
- ☐ the claims:
pages _____, as originally filed
pages _____, as amended (together with any statement) under Article 19
pages _____, filed with the demand
pages _____, filed with the letter of _____
- ☐ the drawings:
pages _____, as originally filed
pages _____, filed with the demand
pages _____, filed with the letter of _____
- ☐ the sequence listing part of the description:
pages _____, as originally filed
pages _____, filed with the demand
pages _____, filed with the letter of _____

2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed; unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language English which is

- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- ☒ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of the translation furnished for the purposes of international preliminary examination (under Rules 55.2 and/or 55.3).

3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages _____
- ☐ the claims, Nos. _____
- ☐ the drawings, sheets _____

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).**

* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this opinion as "originally filed." and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17).

** Any replacement sheet containing such amendments must be referred to under item I and annexed to this report.

INTERNATIONAL PRELIMINARY EXAMINATION

International application No.

PCT/KR2003/002523

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	1-4	YES
	Claims		NO
Inventive step (IS)	Claims	1-4	YES
	Claims		NO
Industrial applicability (IA)	Claims	1-4	YES
	Claims		NO

2. Citations and explanations (Rule 70.7)

Reference is made to the following documents identified in the International Search Report(ISR):

D1 : JP 54-151620 A (29 November 1979)

D2 : JP 60-112849 A (19 June 1985)

The claimed invention relates to a full dull polyamide 6 yarn and a process for preparing the same. The yarn of this invention contains 1.5 to 2.5 wt.% of titanium dioxide and has 35 to 95 titanium dioxide particles having a major axial length of greater than 5µm being contained in 50mg of the yarn, and contains 0.1 to 0.5 wt.% of phosphate salt relative to the weight of titanium dioxide.

D1 discloses a delustered polyester fiber obtained by incorporating 0.1 ~ 3.0 wt.% of finely divided titanium dioxide and 0.1 ~ 5.0 wt.% of finely divided calcium carbonate into a polyester consisting of at least 75% of alkylene terephthalate units.

D2 discloses an objective polyester which can be obtained by incorporating (A) a melt-spinnable polyester (e.g. polyethylene terephthalate) with (B) 0.01 ~ 3 wt% of titanium dioxide having the following characteristics: (i) average particle size: $\leq 0.50\mu\text{m}$ (ii) size distribution ratio $[\gamma]$ in the size distribution represented in terms of the cumulative weight of sedimented particles produced by centrifugal sedimentation process: ≤ 2.3 (iii) content of coarse particles with a size $\geq 1.5\mu\text{m}$: $\leq 0.5\text{wt}\%$ based on the whole particle weight. Furthermore, said titanium dioxide preferably contains $\geq 0.25\text{wt}\%$ of P on a P₂O₅ basis and $\geq 0.1\text{wt}\%$ of K on a K₂O basis.

The feature of the present invention, such as a full dull polyamide 6 yarn containing titanium dioxide particles, is not disclosed in D1 and D2. Therefore, the subject matter of claims 1 to 4 is novel pursuant to PCT Article 33(2).

The subject matter of claims 1 to 4 is considered to involve an inventive step pursuant to PCT Article 33(3), since it refers to an improved product, such as a full dull polyamide 6 yarn having improved full dull effect and drape property since it contains a great quantity of titanium dioxide having a proper diameter in the yarn without degrading the physical properties and operationability, which is not known or even suggested in the prior art, particularly in D1 and D2.

Claims 1 to 4 also meet the criteria set out in PCT Article 33(4), because all the claims are considered to be industrially applicable.